Name and brief description of your initiative and vision Statement:
Models of Infectious Disease Agent Study
As a collaborative network of scientists, MIDAS leads in researching the use of computational and mathematical models that will prepare the nation to respond to outbreaks of infectious diseases.

Mission Statement:
MIDAS's mission is informed by the needs of policymakers and public health officials to have reliable and available computational and mathematical models to prepare for infectious disease outbreaks.

MIDAS's **research mission** includes computational and mathematical investigations of

- Dynamics of emergence and spread of pathogens and their products,
- Identification and surveillance of infectious diseases,
- Effectiveness and consequences of intervention strategies,
- Host/pathogen interactions, and
- Ecological, climatic, and evolutionary dimensions of infectious diseases outbreaks.

MIDAS's **informatics mission** includes

- Developing large-scale computational resources,
- Creating information and knowledge management tools,
- Formulating analytical and statistical approaches,
- Creating a repository for the deposition of models, results, and information,
- Acquiring a variety of data relevant to modeling, and
- Testing and validating of models

MIDAS's **collaborative mission** includes

- Catalyzing discussions among modelers, policymakers, and the public health community that involve setting priorities and designing studies,
- Taking leadership to ensure that MIDAS software is translated into useful tools for the public health community,
- Sharing results and resources with the MIDAS network, policymakers, public health officials, and the scientific community, and
- Taking advantage of the intellectual capital within MIDAS to undertake projects that would be impossible for any single group.

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Website address of initiative:
NIGMS Site: http://www.nigms.nih.gov/Initiatives/MIDAS/

Portal: https://www.epimodels.org/midas/about.do

Brief description of biomedical informatics and computational biology components and their goals:
The informatics component is managed by a cooperative agreement to RTI International which manages the MIDAS Portal, ensures sufficient compute facilities, builds model and data repositories, and develops analytic tools. The informatics group also assists each of the research programs with specialized needs.

Brief description of resources and tools available for sharing:
All of the material to be shared is available on the MIDAS Portal. There are some limitations on the sharing of code and detailed results because of concerns about bioterrorism and privacy. We have not fully addressed these concerns.

Brief description of integrative efforts:
MIDAS is in the early stages of developing standards for data and code management. The most successful activity so far is the model repository which stores and makes available the code and detailed results for each MIDAS project. Versioning is a first step toward integrating informatics. MIDAS also has a data warehouse of data accumulated from mostly public sources. Non-MIDAS investigators have access to these data except where the primary source has limited distribution.
MIDAS has developed collaborations with NCSA, SDSC, TeraGrid, and UPCS for computational support.

Possible opportunities for collaboration or synergy with the NCBCs:
An important area of possible collaboration could be development of visualization tools for complex epidemiological information. We are looking for sophisticated methods that will help non-scientists understand the implications of MIDAS results and to explain the uses of our modeling results.